

### REMARKS

In response to the Office Action mailed August 10, 2004, Applicants request reconsideration. Claims 1, 9, and 13-28 are pending in the application. Claims 9, 13, and 14 are allowed. Claims 1 and 15-28 are rejected. For the reasons discussed below, this rejection is respectfully traversed.

Applicants express appreciation for the interview granted their representative on July 27, 2004. The prior art rejections discussed at the interview are no longer asserted.

### **DRAWING OBJECTION**

A drawing objection was made with respect to the phrase "continuous film" "as described in the specification". Of course, there is no basis for objecting to a term within the specification unless the term appears in the claim. The term "continuous film" appears in claim 22, a claim added in the previous amendment. Thus, there is superficial basis for the objection.

The objection is respectfully traversed and the Examiner's attention is directed to Figure 10 of the patent application showing a structure including a continuously connected wall structure 4 on a substrate 1 and including a continuous film 5 on the substrate 1. This film 5 is continuous because it is deposited in conjunction with the formation of the continuous wall structure 4 and is made of the same material as the continuous wall structure 4 notwithstanding the indication of boundaries shown in Figure 10. The Examiner's attention is directed to the patent application at page 22, lines 1-7 describing what is shown in Figure 10. For a particular range of substrate bias voltages applied to the substrate 1 during the deposition of the carbon material forming the wall structure 4, there may be also deposited a continuous film. As described in the sentence preceding the cited passage, referring to the graph of Figure 9 of the patent application, if the bias voltage is outside the specified range, then the carbon body is not formed but, instead, only the continuous film is formed. What is shown in Figure 10 is a mixture of both the formation of that carbon body and the continuous film.

Since Figure 10 shows the structure described in claim 22 and that structure is described in text at page 22 of the patent application, the objection to the drawing is erroneous. Therefore, that objection should be withdrawn. If the Examiner should, in reply to this Request, issue an Advisory Action, it is respectfully requested that the issue of this drawing objection be addressed. Since a continuing rejection of the claims will almost certainly be the subject of an appeal, the resolution of the drawing issue is requested to avoid the necessity of simultaneously filing a petition to resolve the drawing issue.

### PRIOR ART REJECTION

All of claims 1 and 15-28 have been rejected as anticipated by the Nakamoto (U.S. Patent 6,097,138). This rejection is respectfully traversed.

As explained in greater detail below, contrary to the Examiner's assertion, there is no structure described in Nakamoto that has a plurality of continuously connected intersecting walls transverse to the substrate. Rather, Nakamoto describes a structure of carbon nanotubes. Carbon nanotube structures are repeatedly distinguished from the invention throughout the patent application, a point previously raised. Because of this fundamental error in the examination, which has now been repeated, the rejection is erroneous.

Claims 1 and 15 are the only pending independent claims that are rejected. Claim 1 describes a structure including a carbon body, that body, consisting essentially of carbon, is disposed on a substrate. The carbon body has a plurality of continuously connected intersecting walls transverse to the substrate. Claim 15 is directed to an electric field emission electron source including a carbon body described with the identical language from claim 1 that is cited above. Obviously, if claim 1 is not anticipated by Nakamoto, claim 15 cannot be anticipated by Nakamoto because of this identity of description. It follows that if neither of claim 1 or claim 15 is anticipated, that none of claims 16-28, all dependent claims, can be anticipated by Nakamoto.

Nakamoto provides an unambiguous description of the structure shown in Figure 1A and Figure 1B, the structure to which the Examiner directed attention in the Office Action. An example of such a description of what is shown in those figures appears in column 5, lines 1-7 of Nakamoto.

“Each emitter 14 is made of a plurality of carbon nanotubes 16 basically constituted by an array of 6-membered rings of carbon. As shown in FIGS. 1A and 1B, the carbon nanotubes 16 *normally exist like fallen trees overlapping each other on the support substrate 12*. However, for the sake of simplicity, the carbon nanotubes 16 [are drawn to] rise nearly vertically in the following drawings.” (Emphasis added.)

The “fallen tree” structure illustrated in Figures 1A and 1B of Nakamoto is easy to understand from the side views of those figures. No walls are formed by the carbon nanotubes 16 that form the fallen tree structure. However, according to the Official Action “the plurality of overlapped carbon nanotubes 16 establishes the ‘continuously connecting intersecting walls

transverse [to] the substrate” of claims 1 and 15. Nakamoto never refers to the fallen tree structure as forming a wall or walls. Thus, the fatal errors in this statement of the rejection are that there is no such disclosure in Nakamoto and that the ordinary meaning of the word “wall” has not been employed in interpreting the claims. Because of these errors, the rejection cannot be properly maintained.

It is black letter law that the words of claims are to be given their ordinary meanings unless the Applicant assigns a special meaning to the words, i.e., is his own lexicographer. Here, it is clear that the ordinary meaning of the term “wall” was intended and used in describing the novel structure disclosed, depicted, and claimed in the patent application. Essentially all of the definition of that simple word “wall” taken from the American Heritage dictionary (1985) follows.

1. An upright structure of masonry, wood, plaster, or other building material serving to enclose, divide, or protect an area, esp. a vertical construction forming an inner partition or exterior siding of a building
2. Often **walls**. A continuous structure of masonry or other material forming a rampart or built for defense purposes.
3. A structure of stonework, cement, or other material built to retain a flow of water.
4. Something resembling a wall in appearance, function, or construction, as the exterior surface of a bodily organ or part; *the abdominal wall*.
5. The vertical surface of an ocean wave in surfing.
6. Something resembling a wall in impenetrability or strength: *a wall of silence; a wall of fog*.

The common meaning and understanding of the several definitions of the word “wall”, readily derived from common understanding as well as the dictionary citation, is that a wall continuously divides one region from another. For example, consider definition 6 as well as the connotation of definitions 1-5 in the foregoing quotation. No one would ever consider the “fallen tree” structure of Nakamoto to constitute a wall because the structure is full of holes. That fallen tree structure could not be considered a structure including continuously connected and intersecting walls. For that fundamental reason, the sole prior art rejection is erroneous and should be withdrawn.

The fallen tree structure shown in Figures 1A and 1B of Nakamoto cannot constitute a wall because even when the structure is projected onto a vertical plane, the plane containing Figures 1A and 1B, there are interstices through which, for example, a fluid could flow. That arrangement is not the impenetrability associated with the word wall as used in its common meaning and definition 6. These interstices are readily apparent in those cited figures of Nakamoto but not present in other figures of Nakamoto because the other figures have been, as described by Nakamoto, simplified by removing essential parts of the actual structure formed. The rejection is plainly wrong and should be withdrawn.

While Applicants do not waive the right to present additional arguments against the rejection of the dependent claims, no such argument is required at the present time in order to demonstrate the error in the rejection. Nevertheless, further comments are made with respect to some of the dependent claims that, clearly, have been improperly rejected.

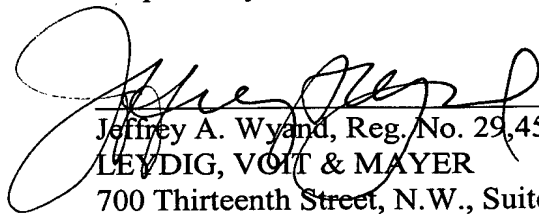
Turning first to claim 18, that claim describes an electric field emission electron source including a cathode electrode and a backside extraction electrode. The body consisting essentially of carbon has a rear side and a front side. The backside extraction electrode is positioned at the rear side of the body of carbon and generates an electric field for inducing emissions of electrons from the opposite, front side of the body of carbon. The cathode electrode supplies electrons to the body of carbon. In the rejection, the claimed structure was compared to the structure shown in Figure 9C of Nakamoto, with the back side extraction electrode being compared to the electrode 54 shown in that figure and the cathode electrode being compared to the electrode 28 of Nakamoto. It is apparent that the field emission source shown in Figure 9C of Nakamoto emits electrons in the upward direction of that figure. Thus, the front side of those nanotubes 16 is in the upward direction. Given that understanding, it is clear that the electrode 54 could not be considered positioned at the rear side of the carbon nanotubes 16 and could not correspond to the back side extraction electrode of claim 18. Thus, Figure 9C of Nakamoto cannot anticipate the structure of claim 18.

For the same reason, it is apparent that claim 19 cannot be anticipated by Nakamoto because the cathode electrode, compared to electrode 28 of Figure 9C of Nakamoto, is not located *only* at the periphery of the carbon nanotube 16. Similarly, the cathode electrode 28 in Figure 9C of Nakamoto is not positioned outside, i.e., beyond, the electrode 54 when viewed in a plane perpendicular to the substrate 12 of that figure. Thus, there is no correspondence between the structure of claim 20 and the cited figure of Nakamoto. Claims 18- 20 cannot be anticipated by the structure shown in that Figure 9C of Nakamoto.

In re Appln. of HOSONO et al.  
Application No. 09/871,976

For all the foregoing reasons, upon reconsideration, the rejection should be withdrawn and all of the pending claims allowed.

Respectfully submitted,

  
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